

We Claim:

1. A process for the preparation of a conducting or semi-conducting polymer with high piezosensitivity which comprises, polymerizing a monomer in an aqueous medium containing an initiator and dopant to obtain the conducting/semi-conducting polymer, precipitating the polymer, separating the conducting/semi-conducting polymer in the form of a powder, drying and crushing the polymer powder, adding the conducting/semi-conducting polymer powder to a solution of another polymer in a solvent, mixing the solution thoroughly, casting a film from the solution, holding the film between two metal electrodes and raising the temperature, applying electric potential at a temperature ranging between 40°C to 100° C for duration ranging from 10 min to 300 min and at a voltage in the range of 50 V to 100 V, cooling the film to give conducting/semi-conducting polymer having high piezosensitivity.
2. A process as claimed in claim 1 wherein the monomer used for polymerization is selected from the group consisting of nitrogen or sulfur containing aromatic or heterocyclic compound.
3. A process as claimed in claim 1 wherein the monomer used for polymerization is selected from the group consisting of aniline, anisidine, toluidine, pyrrole, methyl pyrrole, thiophene, methyl thiophene and a substituted derivative thereof.
4. A process as claimed in claim 1 wherein the initiator and dopant comprises a Lewis acid compound selected from the group consisting of a halide of a transition metal, other acid derivatives containing sulfonic and phosphonic groups.
5. A process as claimed in claim 4 wherein the initiator and dopant comprises ammonium persulphate.
6. A process as claimed in claim 1 wherein the second polymer used for solution casting has a large dipole moment and dielectric constant in the range of 4.0 to 12.0 and solubility parameter in the range of 9.0 to 12.0.
7. A process as claimed in claim 1 wherein the second polymer comprises polyvinylidene fluoride.
8. A process as claimed in claim 1 wherein the solvent used for making the solution has high dielectric constant in the range of 20 to 50 and is selected from the group consisting of dimethyl sulfoxide, dimethyl formamide, dimethyl acetamide and any mixture thereof.
9. A process as claimed in claim 1 wherein the concentration of the conducting/semi-conducting polymer ranges from 3 % to 50%
10. A process as claimed in claim 1 wherein the time treatment is about 60 minutes.

11. A process as claimed in claim 1 wherein the concentration of the conducting/semi-conducting polymer is 20% by weight of the second polymer.
12. A process as claimed in claim 1 wherein the temperature used for treatment of the polymer mixture is 60°C.
13. A process as claimed in claim 1 wherein the conducting/semi-conducting polymer film is cast in a stainless steel dish at a temperature in the range of 25°C to 50°C.
14. A process as claimed in claim 1 wherein the doping is carried out using hydrochloric acid when the polymer is synthesized with other oxidizing agents in neutral condition.